

Strategic Management

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Course of Study: RBP020L068S - Supply Chain Strategy and Processes

Title: Strategic Management

Name of Author: Richard Lynch

Name of Publisher: Pearson Education Ltd

CASE STUDY 14.3

Green strategy in the world car industry: who makes the rules?

Passenger car manufacturers around the world are under pressure from governments and customers to make cars more fuel-efficient and more sustainable. But who makes the laws and with what criteria?

R&D investment

From the perspective of the earth's resources and atmosphere, R&D to reduce the exhaust emissions and to lower the energy consumption of cars has become an important part of the business strategy of all car manufacturers. Figure 14.9 shows that each major car manufacturer is at a different stage in its search for lower CO₂ emissions.

Although petrol engines and related car technologies are relatively mature, they still use expensive fuels and emit fumes into the air. In both the EU and the USA, government policy through legislation has been to encourage and support new more environmentally friendly automobiles. Car companies have therefore focused on developing 'greener cars', i.e. cars with either zero or very low emissions and cars with more

fuel-efficient engines. As a result, the combined R&D expenditure of the ten leading car companies was around \$50 billion *per year* in the period 2005–2009; massive sums by any standards.

Hybrid cars: the 'petrol plus battery' model

One of the early leaders in green strategy was the Toyota car company. Toyota developed a totally new model of car – the new *Prius* (the word means 'ahead of time') – in the early 2000s. It was a hybrid power vehicle involving two forms of technology combined into one car engine. There was a high-efficiency petrol engine for low speeds in town coupled with a zero-emission electric motor for higher steady speeds on motorways – all combined into one engine. Honda also

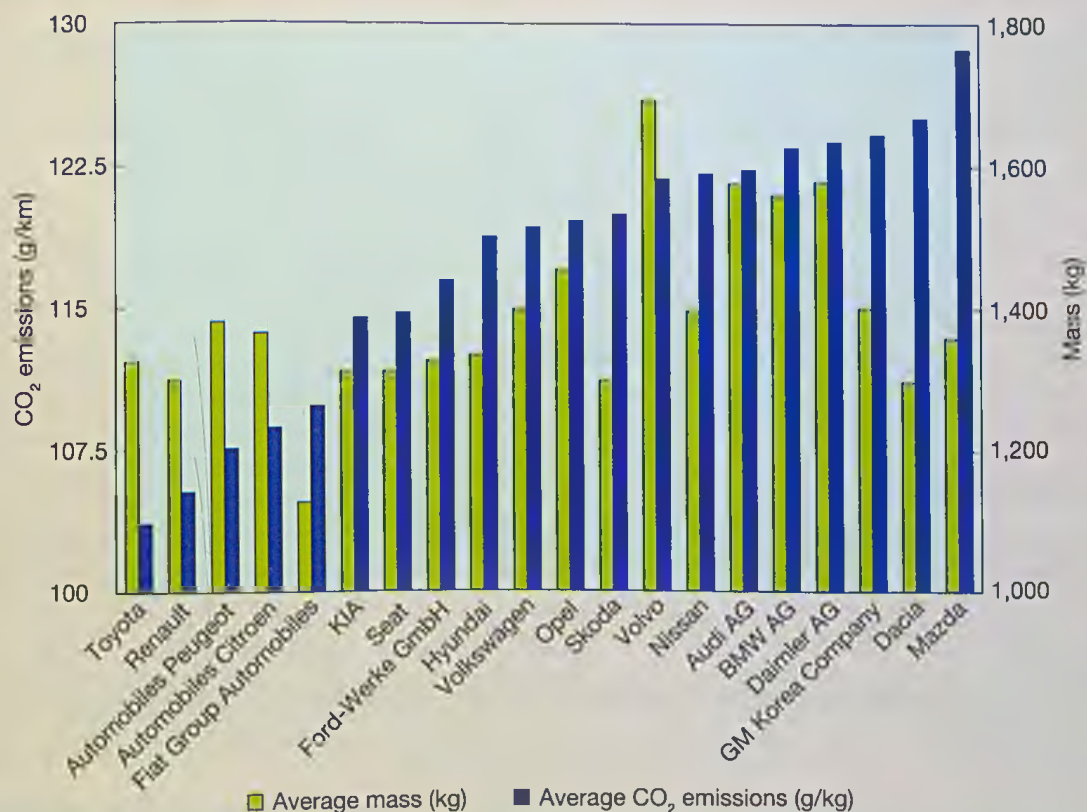


Figure 14.9 CO₂ emissions by car manufacturer, 2012

Note: The chart shows the average emissions from cars produced by Europe's large car manufacturers. The emissions are adjusted for the number of cars manufactured in a particular year and for the weight of the vehicles. For example, Fiat produces mainly smaller, lightweight cars with lower emissions. In other words, it is more sustainable to be on the left side of the chart

Source: based on data from EEA (2013) *CO₂ emissions performance of car manufacturers in 2012*, European Environment Agency, Copenhagen.

developed similar technology. The Prius battery was relatively small compared to the petrol engine in these designs and was re-charged by energy from the brakes. These car models were priced from around \$28,000 in 2013.

Amongst the American car manufacturers, GM also launched the *Chevrolet Volt* with a hybrid engine in 2011. However, it was different to the Prius with the electric battery being substantially larger and having a driving range of 40 miles on a single charge. There was also a petrol engine to re-charge the battery and extend the driving range to over 300 miles. It was different from the Prius in that the Volt's petrol engine was simply used to re-charge the electric battery. It was not connected to the drive wheels like the Prius' engine. The Volt was priced around \$41,000 before any government subsidies. The European version of the Volt was called the *Ampere* and was launched in 2012 with a higher price around \$58,000. However, this price was expected to be reduced by government subsidies on 'green cars' of around \$10,000.

All-electric cars

All-electric cars do not use petrol or diesel. They only have a battery and therefore have zero emissions. In 2010, Toyota announced a joint venture to develop an all-electric car with the well-known American all-electric car manufacturer, Tesla. Full details were not available at the time of writing this case. In 2013, Ford launched an all-electric car, the *Focus Electric*. It was priced around \$35,000 in the USA. Even with the possibility of a federal tax subsidy of \$7,500, it was still more expensive than standard petrol engine cars, but it was clearly more sustainable.

Other vehicle companies were taking similar approaches at the time of writing this case in 2014. For example, Renault and its major partner Nissan launched the *Leaf* with an all-electric engine. The car had a range of around 100 miles before the battery needed recharging. It was priced around \$35,000 and launched in 2011. As Mr Carlos Ghosn, Chairman of both Renault and Nissan explained, 'We must have zero-emission vehicles. Nothing else will prevent the world from exploding.'

Problems with electric cars

There were two problems with battery-driven cars that posed particular concerns: the first was 'range anxiety'. Some customers

feared that they would not be able to reach their destinations on one electric charge. Moreover, there were unlikely to be many re-charging points around the country in the early years for electric cars. The second problem was high price. Green cars were more expensive than similar petrol-driven models due to the high cost of battery production compared to petrol engine production. This was likely to remain a problem in spite of subsidies from national governments to encourage the take-up of green cars. Some commentators therefore predicted that green cars would primarily be bought by high-wealth customers. However, no one really knew.

These problems were summarised in a 2011 headline in the *Financial Times*, 'Electric charge is a leap of faith'. At the time of writing this case, the potential demand for green cars remained largely unknown. Some manufacturers were expecting them to account for 10 per cent of the total market demand, while others doubted this. For example, Dieter Zetsche, the CEO of one of the world's largest car and truck makers, Daimler, estimated that they would only capture between 1 and 5 per cent of the market.

Other approaches to sustainability

Daimler was not alone in suggesting that electric cars were not the main way forward for green car strategy. Volkswagen, Europe's largest car manufacturers, took a similar view. VW accepted that there would be a range of electric cars by 2020, but their view was that such vehicles would remain a small part of the total market. Hence, the main focus of the VW strategy has been to continue with petrol and diesel engines but to increase their efficiency and reduce emissions. To quote from the 2009 VW Annual Report: 'Because most vehicles will still continue to be powered by conventional combustion engines, the [company] considers it more important than ever to focus on developing petrol and diesel engines: Dr Tobias Losche-ter Horst, head of drive train research at VW explained, "I have little doubt that we will be able to reduce the fuel consumption of a Golf Diesel to under three litres per hundred kilometres in the next ten years. This would be approximately a third less than current models."' From this perspective, more fuel-efficient petrol cars coupled with the use of other bio-fuels derived from plants were likely to prove more effective over time. Table 14.2 summarises the main green strategy issues.

Table 14.2 Greener cars – replacing the basic petrol engine in 2017?

For	Against
• Government legislation on limiting emissions and fuel efficiency • Customer desire to preserve the environment • Scientific evidence on global warming • Need for companies to keep up with competition • Increasing price of petrol • More public transport to provide an alternative to car travel	• Cost and uncertainty of further development in green technologies • Price of cars will rise • Demand strongest in developed countries, but these countries are not the fastest growing car markets • Low profitability of some green technology suppliers • Reaction against the increased use of bio-fuels because this has raised the price of all agricultural products • Insufficient powerpoints for re-charging electric vehicles

Issues for government and other public bodies

In principle, governments around the world have taken the decision to force manufacturers to design cars with greater fuel efficiency, lower emissions and higher sustainability. The problem facing both the governments and the car companies was that this was fine in principle, but how far should governments go? For example, should all governments adopt the same world standards? What would be the cost of such a move? What would be the proven benefits and would they outweigh the costs? The lack of agreement between nations at the Doha 2012 Climate Change Conference shows the difficulties involved. Coupled with differing views amongst car manufacturers, there was plenty of room for discussion.

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Case questions

- 1 Some car manufacturers argue that sustainable green cars will still form a very small percentage of total car usage over the next few years. Government legislation will not be enough to increase demand for such cars. What are the problems faced by customers interested in buying such cars?
- 2 Should governments do more to support the spread of greener, more sustainable cars? At what cost? And with what underpinning principles?
- 3 Is this just a problem for countries with high wealth per head of the population, like the USA and Germany? Or should it concern countries with lower wealth like Russia, Brazil and South Africa? If it should also concern lower-wealth countries, what can they realistically do about it given their lower level of resources? Can car companies help here? If so, how and at what cost?

CRITICAL REFLECTION

Caution on green strategy development?

This chapter has focused on green strategy and sustainability. It has demonstrated that all such strategies have costs as well as benefits: there is no 'free lunch' for green strategy. What are the implications for companies? Should they develop green strategies almost regardless of the costs? Or should they take a more cautious approach? But what does 'caution' mean here? By what criteria should companies judge 'caution'?

SUMMARY

- Green strategy and the broader topic of sustainability concern those activities of the organisation that are focused on both sustaining the earth's environment and developing the business opportunities that will arise from such additional activities. It has three main components: government legislation and directives; business opportunities; and customer and value chain issues.
- There are seven main trends that need to be considered in green strategy: electrification; sustainable natural resources; carbon neutral organisations; country self-sufficiency in energy; greater energy and resource efficiency within countries; waste disposal; and changes in lifestyle with regard to energy generation and consumption.
- Green strategy will provide one of the next major business opportunities for some companies. Sustainability policies have the potential to lead to new technologies and new business growth. They represent a 'new wave' of innovation. Business opportunities arise because green strategy is still in the early stages of development. There are many new energy technologies, such as wind farms and waste disposal, which will provide new growth areas for organisations.
- Government legislation and directives on green issues will need to be analysed by every organisation to ensure that the firm fully complies in such matters.
- Customers and consumers are broadly in favour of green strategies. In some cases, they have positively campaigned for change. Business needs to react positively where possible to such events.